R.F. Power Amplifier, Oscillator, A.F. Power Amplifier, Modulator

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

A.F. Power Amplifier and Modulator—Class A

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	—	10	10
D.C. Plate Voltage	1250	1000	1200
D.C. Grid Voltage	—	—55	—70
Peak A.F. Grid Voltage	—	50	65
D.C. Plate Current (ma.)	—	75	80
Plate Dissipation (watts)	100	75	96
Load Resistance (ohms)	—	4800	7600
Power Output (watts)	—	14	21
Distortion (% Second Harmonic)	—	5	3

A.F. Power Amplifier and Modulator—Class B

	Maximum Rating per Tube	Typical Operation Two Tubes	
A.C. Filament Voltage	—	10	10
D.C. Plate Voltage	1250	1000	1250
D.C. Grid Voltage	—	—72	—90
Load Resistance (ohms per tube)	—	1250	1675
Effective Load Resistance (Plate to Plate) (ohms)	—	5000	6700
Zero Signal Plate Current (ma.)	—	60	50
Peak A.F. Grid to Grid Voltage	—	344	380
Max. Signal D.C. Plate Current (ma.)	210	400	400
Max. Signal Plate Input (watts)	260	400	500
Plate Dissipation (watts)	125	—	—
Max. Signal Driving Power (Approx.) (watts)	—	4	4.5
Max. Signal Plate Power Output (watts)	—	240	320

R.F. Power Amplifier—Class B—Telephony

(Carrier conditions for use with modulation factor of 1.0)

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	—	10	10
D.C. Plate Voltage	1250	1000	1250
D.C. Grid Voltage	—	—60	—85
Peak R.F. Grid Voltage	—	100	110
D.C. Plate Current (ma.)	150	140	130
Plate Input (watts)	175	140	162
Plate Dissipation (watts)	125	95	107
D.C. Grid Current (Approx.) (ma.)	—	2.5	1.0
Driving Power at Peak Modulation (Approx.) (watts)	—	3.5	3.6
Plate Power Output (watts)	—	45	55
Frequency Limit for Above Operation (mc.)	20	30	20

GENERAL CHARACTERISTICS

Filament Voltage	10-10.5
Filament Current (amps)	3.25
Amplification Factor	12.5
Grid to Plate Transconductance @ 100 ma.	4300 micromhos
Direct Interelectrode Capacitances:	
Grid to Plate	9.0 $\mu\mu f$
Grid to Filament	5.5 $\mu\mu f$
Plate to Filament	3.5 $\mu\mu f$

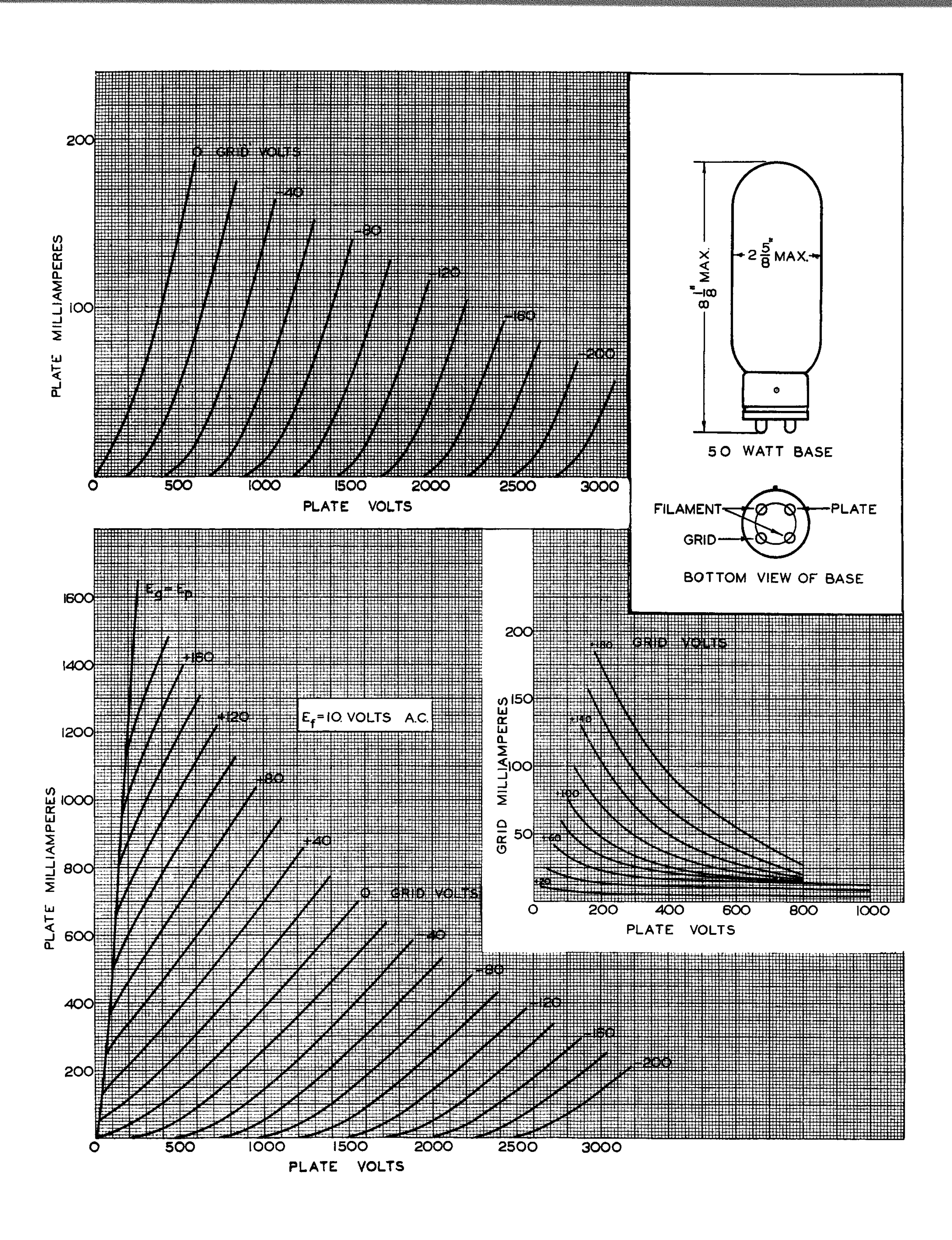
Plate Modulated R.F. Power Amplifier Class C—Telephony

(Carrier conditions for use with modulation factor of 1.0)

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	—	10.5	10.5
D.C. Plate Voltage	1250	1000	1250
D.C. Grid Voltage	—400	—250	—300
Peak R.F. Grid Voltage	—	380	430
D.C. Plate Current (ma.)	175	170	166
Plate Input (watts)	220	170	208
Plate Dissipation (watts)	85	55	60
D.C. Grid Current (Approx.) (ma.)	50	10	8
Driving Power (Approx.) (watts)	—	3.5	3.5
Plate Power Output (watts)	—	115	148
Frequency Limit for Above Operation (mc.)	10	20	10
F.C.C. Broadcast Rating (watts)	125		125

R.F. Power Amplifier or Oscillator—Class C Telegraphy

	Maximum Rating per Tube	Typical Operation One Tube	
AC. Filament Voltage	—	10	10
D.C. Plate Voltage	1250	1000	1250
D.C. Grid Voltage	—400	—200	—250
Peak R.F. Grid Voltage	—	340	385
D.C. Plate Current (ma.)	210	200	200
Plate Input (watts)	260	200	250
Plate Dissipation (watts)	125	55	80
D.C. Grid Current (Approx.) (ma.)	50	15	10
Driving Power (Approx.) (watts)	—	5	3.5
Plate Power Output (watts)	—	145	170
Frequency Limit for Above Operation (mc.)	20	30	20



0 GRID VOLTS
-40
-80
-120
-160
-200
PLATE MILLIAMPERES
PLATE VOLTS
8 1/8" MAX.
2 5/8" MAX.
50 WATT BASE
FILAMENT
PLATE
GRID
BOTTOM VIEW OF BASE
$E_g = E_p$
+160
+120
+80
+40
E_f = 10 VOLTS A.C.
GRID MILLIAMPERES